

AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 04-01 – April 26-27, 2004
History Record

FAA Control # 04-01-249

SUBJECT: RNAV Terminal Routes for ILS SIAPs

BACKGROUND/DISCUSSION: The ILS will remain the precision instrument approach of choice for many years to come. The time is overdue to meld the maturing LNAV capabilities now present in most turbine aircraft with the ILS final approach segment. Although this technically has been accomplished by coding the existing ground based feeder routes, initial approach segments, and missed approach segments into an ILS IAP FMS database, flexibility and efficiency of operation has been denied by not designing unique and efficient LNAV terminal routes for ILS IAPs. At high traffic locations, it possibly makes little practical difference. But, at non-radar, mountain locations such as Jackson Hole, WY and Helena, MT, great savings in route miles could be achieved while providing optimal non-radar routing for both operators and ATC.

A case-in-point: Jackson Hole's terminal instrument procedures are presently in coordination for revision because of the relocation of the JAC VOR. Also, Salt Lake Center, which provides non-radar terminal ATC services for this location, no longer wants the long-standing "return to facility" missed approach procedure. This present missed approach procedure represents some 70-90 flight-path miles to attempt another Runway 18 ILS approach, depending upon climb performance. The proposed missed approach goes to Big Piney, WY, many miles away. This is because the VOR navigation system in the Jackson Hole area is terrain-blocked from providing efficient missed approach routing, other than the present return-to-facility procedure. The Big Piney routing, if continued on airways for another ILS approach, would require 377 flight-path miles, vice the present 70-90 flight-path miles. With an LNAV missed approach flight track, this mileage could be significantly reduced, yet satisfy ATC's new requirements. This is demonstrated by a proposed RNAV SIAP for Runway 18, which has an efficient return-to-approach missed approach flight track.

RECOMMENDATION: AFS-420 should establish policy guidance to use existing RNAV criteria for AVN-100 to use to design efficient LNAV terminal routing for ILS SIAPs at locations where efficiency of operations would be enhanced. This "ILS/LNAV" procedure should be issued so that it is the coded database ILS procedure for a given runway. The existing, ground-based terminal routing ILS SIAP should become the secondary "NOT IN DATABASE" ILS SIAP for a given runway. This would not impose a hardship on anyone because the non-RNAV aircraft simply uses the paper chart and the associated ground-based navigation facilities.

COMMENT: This recommendation affects FAAH 8260.3B, 8260.19C, and various internal FAA directives.

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Initial Discussion – Meeting 04-01: New issue presented by Steve Bergner, NBAA, recommending that RNAV should be used in conjunction with conventional ILS approaches to enhance efficiency. Ted Thompson, Jeppesen, stated that there has been discussion on this issue within Jeppesen and he does not recall any contradiction with coding RNAV transitions to ILS final approach courses. He believes the suggestion is acceptable but will research procedure-coding capabilities. Steve suggested that two procedures could be developed and only one coded. Ted responded that this could create chart-database harmonization problems. Kevin Comstock, ALPA, asked if this concept was originally proposed for Order 8260.51 but dropped by RNP purists. Tom Schneider responded that the proposed combined RNAV order would assess using RNAV to join conventional final approaches. **ACTION: AFS-420, AVN-503, and Jeppesen.**

MEETING 04-02: Tom Schneider, AFS-420, briefed that construction of an RNAV transition to ILS/MLS final segments will be included in the consolidated 8260.RNAV order. The order should be completed in calendar year 2005. Ted Thompson, Jeppesen, reported that ARINC capability does exist for coding this type procedure; however, it is currently unused due to operational concerns; i.e., chart/database/procedure source harmonization issues. Mitch Scott, Continental Airlines, questioned if this would require additional procedure naming; i.e., multi-approach procedure titles. Brad Rush, AVN-101, responded that it should not. He visualizes that the procedure will retain the conventional name and any RNAV transition would include a note applicable to the specific transition; e.g., “RNAV-equipped aircraft only”, such as is currently done for DME. **ACTION: AFS-420.**

MEETING 05-01: Bill Hammett, AFS-420 (ISI), briefed the following update from Jack Corman, AFS-420: The terminal RNAV criteria rewrite is the next project criteria project following the completion of RNP SAAAR criteria coordination and signature. Expect the criteria to enter coordination by the September/October. AFS-420 will continue to track criteria development and report. **ACTION: AFS-420.**

MEETING 05-02: Tom Schneider, AFS-420, briefed the following update from Jack Corman, AFS-420: Order 8260.RNAV will incorporate the new LPV criteria; therefore, it will follow publication of Order 8260.50A, *The United States Standard for Global Positioning System (GPS), Wide Area Augmentation System (WAAS), Instrument Landing System (ILS), and Localizer Performance With Vertical Guidance (LPV) Approach Procedure Construction*. 8260.50A will enter coordination in November, and work on 8260.RNAV will commence at that time. 8260.RNAV should enter coordination in the summer/fall 2006. Tom noted that the current approach procedure title methodology will not change and continue to reflect the conventional NAVAID required for final approach course guidance; e.g., ILS RWY xx. RNAV-only approach transitions will be annotated on the 8260 procedure source and will include an appropriate equipment note; e.g., “RNAV equipped aircraft only”. Charting or coding specifications should not be affected. Tom further briefed that appropriate criteria is being discussed and ultimately will be incorporated into the new 8260 RNAV/LPV Order. One option would be to simply add RNAV initial transition(s) to a conventional ILS approach, with appropriate equipment notes (applicable to individual RNAV transition route, or as a procedure note for entire procedure). Another option would be to create a separate ILS approach with RNAV Transitions as a separate procedure, which would be titled ILS-Z. Action to be determined. **ACTION: AFS-420.**

MEETING 06-01: Tom Schneider, AFS-420, briefed the following update from Jack Corman, AFS-420: Non-concurrence with the criteria in draft Order 8260.RNAV was received from 2 lines of business. The non-concurs were mitigated on April 14th. The draft order will be finalized and forwarded to AFS-1 for signature the week of April 17th. It is expected that the Order will be signed and an official number assigned by the week of May 8th. John Moore, NACG, asked whether a decision had been made regarding the two charting options noted at the last meeting (add RNAV transitions to existing ILS IAPs or publish separate approaches for RNAV use). Ted Thompson, Jeppesen, stated that every effort should be made to avoid option 2 (separate approaches). He would prefer a "RNAV required" note on the transition over the "Z", "Y", "X" naming convention. Tom stated that there may be instances where multiple approaches may be necessary; however, he would note the ACF preference for a single IAP. He added that 8260.19 policy would be written AFTER the criteria were developed. **ACTION: AFS-420.**

MEETING 06-02: Tom Schneider, AFS-420, briefed the following update from Jack Corman, AFS-420: "FAA Order 8260.54, *The United States Standard for Area Navigation (RNAV)* was signed and effective June 16, 2006. The Order provides criteria for RNAV capability to an ILS final and from an ILS final to an RNAV missed approach. Additionally, the new FAA RNAV substitution policy enables this capability for GPS (and when annotated, DME/DME/IRU equipped aircraft) guided systems when conventional NAVAIDs are inoperative. Recommend the issue be closed." Tom noted that there are still some charting issues being resolved. John Moore, AJW-352, asked about including equipment requirements in procedure titles; e.g. DME/DME/IRU or GPS. Ted Thompson, Jeppesen, responded that chart makers and database coders want equipment requirements left out of procedure titles, preferring briefing strip notes. Danny Hamilton, AJW-321, asked whether a single RNAV transition could be added to a chart. The consensus was that this methodology is preferable to a second procedure chart. The group consensus was that the issue could be closed. **ISSUE CLOSED.**
